# HELIX

## Helix Hybrid Cabs

In any digital device, there will always be some functions that require a large amount of horsepower to accomplish and others that are far more efficient. If you think about devices that you use every day, typing an email on your computer or smart phone feels quick and responsive because generating text is easy for the processor. Watching a full HD movie is a different story however, because video requires much more DSP overhead to display.

In our world of digital audio, time-based effects are often the most DSP-intensive, with delays, reverbs, amps and speaker cabinets topping the list of the hungriest processes.

Speaking of hungry processes, speaker cabinet emulations that are created using impulse responses (like the ones in Helix) traditionally use a large amount of DSP. This is due to the fact that these impulse responses are actually short audio recordings containing capture data from a mic'd speaker cabinet. The higher the quality and the longer the recording, the more accurate and detailed the speaker emulation is, but that increase in quality has a greater DSP load.

Along with its suite of internal speaker cabinet models, Helix also allows you to load high-quality impulse responses from third parties. While this is a fantastic option to have, it's important to note that the factory speaker cabinets in Helix offer a number of advancements over traditional static third-party impulses.

We call the speaker emulations in Helix "hybrid cabs", because they use a number of proprietary algorithms to reproduce the same frequency and dynamic accuracy typically seen in a 2048-point impulse response, but at far lower DSP usage.

Not only that, a hybrid cab allows you to move the microphone from directly on the grill to up to 12 inches away (in .5 inch increments), and accurately captures the proximity effect/bass boost of the microphone in all positions while doing so. All of this detail means that the speaker cabinet reacts just like the real thing, not just sounding better but feeling better under your fingers.

Due to the efficiency improvements hybrid cabs offer, it's actually possible to run up to four speaker cabinets at once in Helix (depending on DSP load), all with different microphones and microphone positions!

The main thing to get out of all of this is that while Helix offers the ability to load third-party impulse responses, you shouldn't feel that it's necessary to do so to get fantastic tones. HX cabs offer authentic speaker and microphone behavior with more flexibility and lower DSP usage, leaving you more processing headroom for effects.

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